

Laird Technologies has broadened its Ferrite Chip Bead product offering by adding the smaller EIA 0201 (Metric 0603) version to the existing EIA 0402 ~ 3312 (Metric 1005 ~ 8531) product family. The smaller foot-print makes this chip bead ideal for miniature and portable electronic system devices. The new 0201 series is an ultra-compact, monolithic EMI suppression chip designed for digital signal lines. It offers space efficiency with superior EMI noise filtering over a wide frequency range of low to several hundred MHz for broad-band signal interfaces, up to GHz ranges for high-frequency signal lines.

**FEATURES**

- Rugged monolithic construction
- Smaller foot-print: 0.6 mm x 0.3 mm x 0.3 mm
- Superior impedance vs. frequency characteristics with low DCR
- EMI noise suppression for high frequency and broad-band signal lines
- Lead free and RoHS compliant

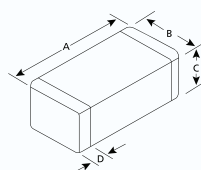
**MARKETS**

- Advanced hand-held devices
- Cellular phones
- Bluetooth headsets
- PDAs
- GPS
- MP3 players
- Digital camcorders and cameras

**ELECTRICAL PROPERTIES**

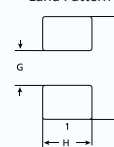
Part Number	Metric Package Size	IMPEDANCE (Ω)				PEAK IMPEDANCE		DCR Max (Ω)	Current Rating (mA)
		25 MHz	100 MHz	500 MHz	1 GHz	Frequency (MHz)	Impedance (Ω)		
LI0201C330R-10	0603	7	33	113	153	1646	171	0.5	300
LI0201C560R-10	0603	11	56	186	252	1347	268	0.6	300
LI0201B800R-10	0603	31	80	195	224	978	225	0.8	200
LI0201C800R-10	0603	18	80	335	428	903	434	0.6	300
LI0201E800R-10	0603	41	80	119	116	605	120	0.5	500
LI0201B121R-10	0603	39	120	247	269	800	275	0.8	200
LI0201C121R-10	0603	59	120	189	182	630	190	0.7	300
LI0201B241R-10	0603	81	240	586	321	390	619	1	200
HZ0201A601R-10	0603	280	600	610	330	200	760	1.5	100

**MECHANICAL DIMENSIONS**



Metric (EIA) Pkg Size	A mm (inch)	B mm (inch)	C mm (inch)	D mm (inch)
0603 (0201)	0.60 (.024)	0.30 (.012)	0.30 (.012)	0.15 (.006)

Land Pattern



G mm (inch)	H mm (inch)	L mm (inch)
0.25 (.010)	0.32 (.013)	0.69 (.027)

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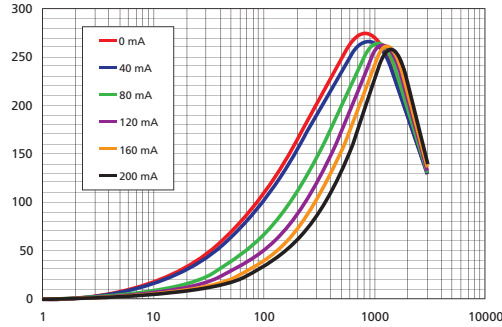
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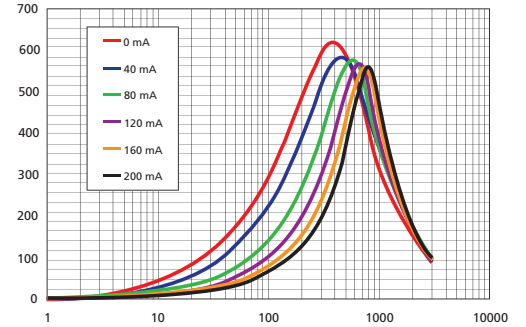
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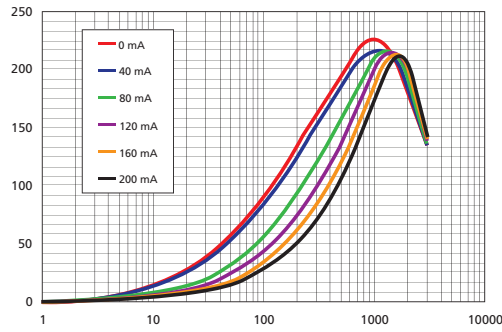
LI0201B121R-10



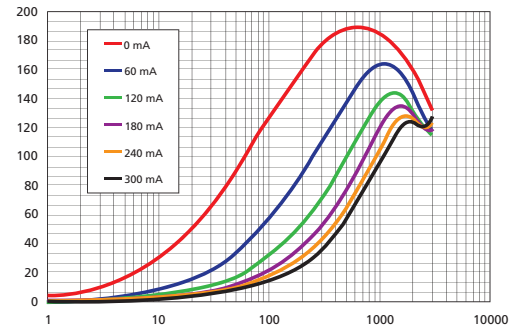
LI0201B241R-10



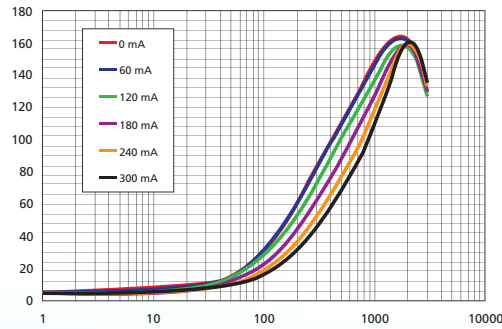
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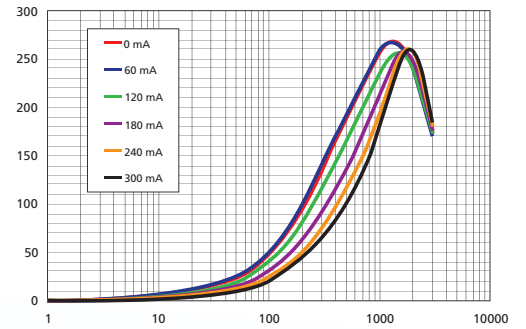
LI0201C121R-10



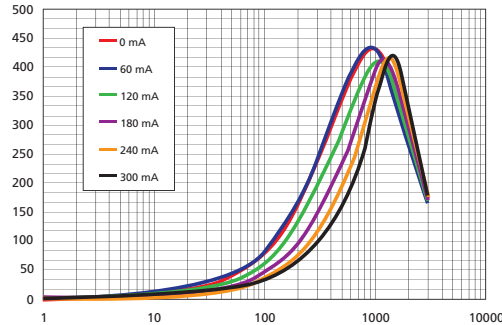
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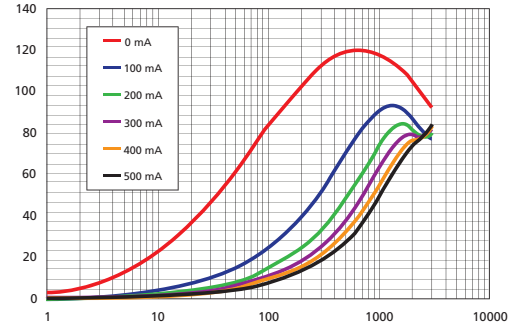
LI 0201C560R-10



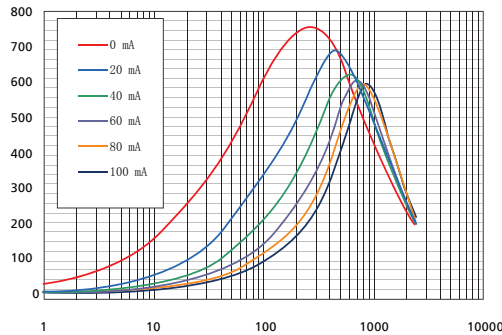
LI0201C800R-10



LI0201E800R-10



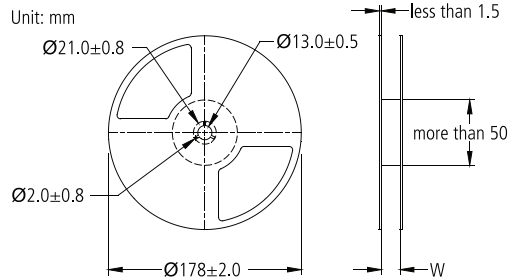
HZ0201A601R-10



## Competitor Cross-Reference

COMPETITORS			LAIRD TECHNOLOGIES	IMPEDANCE (Ω)				PEAK IMPEDANCE			
Murata	TDK	Taiyo Yuden	Part Number	25MHz	100MHz	500MHz	1GHz	Frequency (MHz)	Impedance (Ω)	DCR Max	Current Rating
BLM03PG330SN1	MMZ0603D330C	BK0603HS330 BK0603LL330	LI0201C330R-10	7	33	113	153	1646	171	0.5	300
	MMZ0603D560C	BK0603LL560	LI0201C560R-10	11	56	186	252	1347	268	0.6	300
BLM03AG800SN1	MMZ0603S800C MMZ0603D800C	BK0603HS800	LI0201B800R-10	31	80	195	224	978	225	0.8	200
			LI0201C800R-10	18	80	335	428	903	434	0.6	300
			LI0201E800R-10	41	80	119	116	605	120	0.5	500
BLM03BB121SN1	MMZ0603S121C	BK0603HS121	LI0201B121R-10	39	120	247	269	800	275	0.8	200
BLM03BD121SN1	MMZ0603Y121C	BK0603HM121	LI0201C121R-10	59	120	189	182	630	190	0.7	300
BLM03AG121SN1	BK0603LL121										
BLM03BD241SN1	MMZ0603S241C	BK0603HS241	LI0201B241R-10	81	240	586	321	390	619	1	200
BLM03AG241SN1	MMZ0603Y241C	BK0603HM241									
BLM03AG601SN1	MMZ0603S601C	BK0603HM600	HZ0201A601R-10	280	600	610	330	200	760	1.5	100

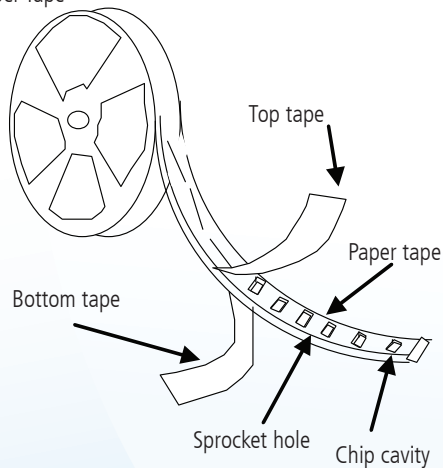
**REEL DIMENSION**



Type	W [mm]
0201	9.0 ±0.3

**TAPING MATERIAL**

\* Paper Tape

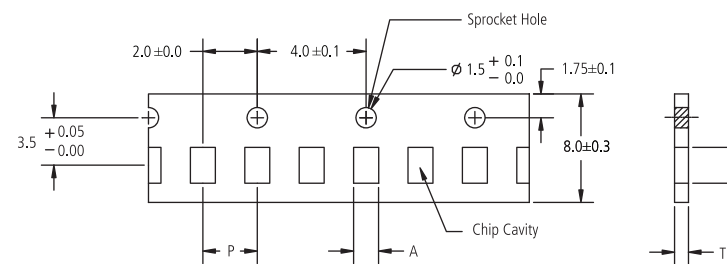


**STANDARD QUANTITY**

Type	QTY (PCS)
0201	15,000

**TAPING DIMENSION 8mm wide**

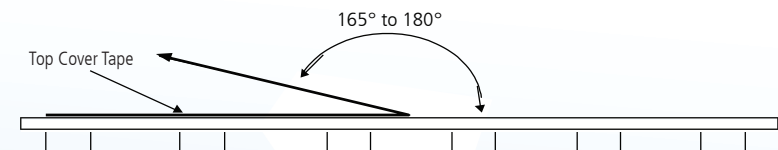
\* Paper Tape  
unit:mm



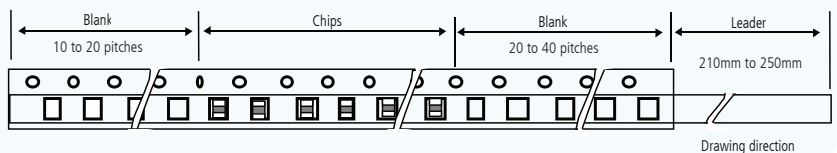
Product	Type	A	B	P	T(max.)
Chip Bead	0201	0.38 ±0.02	0.68 ± 0.02	2.0 ±0.05	0.44

**TOP TAPE STRENGTH**

\* The force for tearing off top tape is 20 to 70 grams in the arrow direction.



**LEADER AND BLANK PORTION**



\* The pitch holes shift within ±0.3mm for cumulative 10 pitches

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SIP-SPEC-0201 1209

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## LEAD-FREE/ROHS COMPLIANCE

All Laird Technologies' surface mount and through hole EMI components (including assemblies with wire and cofired monolithic ferrite chip beads and common mode chokes) are available lead-free and RoHS compliant.

### PART NUMBERING SYSTEM

Lead-free board level part numbers are differentiated by a suffix descriptor. The suffix (-10) identifies the part number for all lead-free parts. This part number suffix is for use on board level part numbers only.

### PART NUMBER EXAMPLES

<b>Old Part</b>	<b>HZ0805E601R-00</b>	<b>contains lead</b>	<b>Old Part</b>	<b>28F0121-0SR</b>	<b>contains lead</b>
<b>New Part</b>	<b>HZ0805E601R-10</b>	<b>is lead-free</b>	<b>New Part</b>	<b>28F0121-0SR-10</b>	<b>is lead-free</b>

All Laird Technologies' new and old ferrite cable cores are RoHS compliant. No part number change for cable cores.

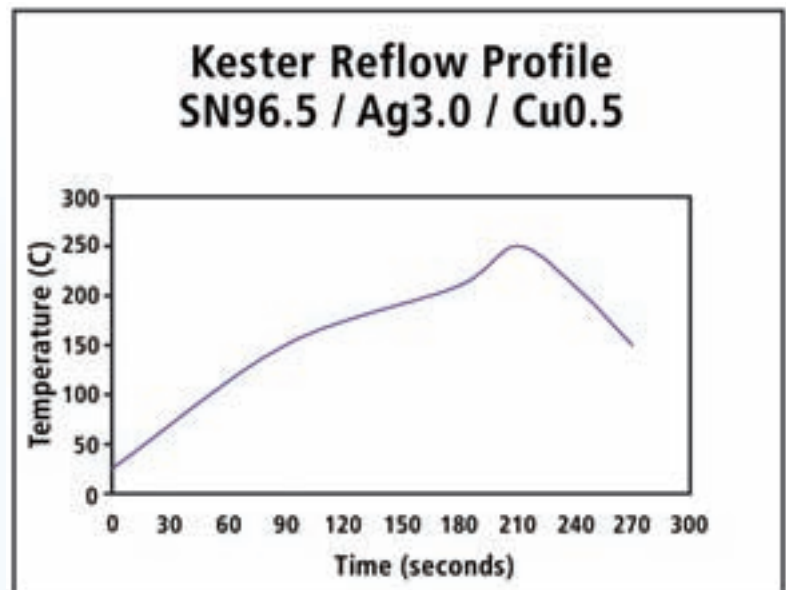
### COMPOSITION

Laird Technologies' lead-free component terminations and wire platings are 100% matte Tin (Sn) over a Nickel (Ni) barrier and are reverse compatible with existing Tin (Sn)/Lead (Pb) materials.

Concerns over the use of pure tin coatings on component leads and terminations, due to the possibility of tin whiskering, are still under industry discussion. Electroplating 100% matte tin over a nickel barrier is recognized as an effective whisker growth mitigation strategy that is accepted by most industry groups. Laird Technologies' maintains a minimum plating thickness of 2.5µm [99µin] of Tin, and 0.7µm [28µin] of Nickel.

### RECOMMENDED LEAD-FREE SOLDERING PROFILE

While Laird Technologies' lead-free surface mount and through hole components are reverse compatible with existing Sn/Pb materials, higher peak temperatures (up to 260°C) provide better wetting characteristics during the solder reflow process. The higher reflow temperatures typically used for lead-free processes will not damage Laird Technologies' surface mount components, but the delta T between the board and larger components must be considered. Smaller delta Ts can be achieved with slower belt speed to increase the pre-heat time. Soldering cycle time (throughput) must be balanced with reflow temperature. Allowance must be made for the coldest part (largest heat sink) to solder, considering the thermal mass of the board and size of the components.



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## MOISTURE SENSITIVITY

Laird Technologies' surface mount components are not moisture sensitive as defined in IPC / JEDC J-STD-020C, as they are hermetic devices. All surface mount components are packaged in tape & reel. Each reel is single packed in a sealed bag with sufficient desiccant to prevent oxidation of part terminations and maintain shelf life.

## SHELF LIFE

**Cofire Monolithic Products** are allowed twelve (12) months from date of shipment for product stored in unopened, original packaging. Once the original packaging is opened the shelf life is reduced to three months (or the remainder of the 12 months if opened after 9 months).\*

**Assembled Products with wire** are allowed twenty-four (24) months from date of shipment for product stored in unopened, original packaging. Once the original packaging is opened the shelf life is reduced to six Months (or the remainder of the 24 months if opened after 18 months).\*

\*Note: Board Level Cofire (monolithic) and Assembled products with wire must be stored in a non-corrosive, temperature and humidity controlled environment. The temperature should be between  $-5^{\circ}\text{C}$  and  $+40^{\circ}\text{C}$ , and the humidity between 40 and 60% RH, with no sudden changes.

**Ferrite Cores for cables and wiring harnesses** have an unlimited shelf life. All cores are RoHS compliant.

**Ferrite Disks & Plates with adhesive** have twenty-four (24) months shelf life on the adhesive from date of certificate of analysis. Ferrite Disks & Plates will be labeled at the manufacturing site to indicate expiration date of the adhesive on the disk or plate. Ferrite Disks & Plates are RoHS compliant.

## OPERATING TEMPERATURE FOR BOARD LEVEL SHIELDS

All board level part electrical specifications and tolerances are based on room temperature ( $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ). Laird Technologies' board level parts have an operating temperature of  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  (unless stated otherwise). While the parts will continue to operate and not be damaged over this range, they may not operate within the specified electrical performance tolerances during exposure to extreme temperatures.

**NOTE : All Laird Technologies' Ferrite EMI cable cores are RoHS compliant**

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